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10/777,167	02/13/2004	Hideyuki Nishikawa	019519-418	4460
21839	7590	12/14/2005	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			HON, SOW FUN	
			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/777,167	<b>Applicant(s)</b> NISHIKAWA ET AL.	
	<b>Examiner</b> Sow-Fun Hon	<b>Art Unit</b> 1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 5-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 5, there are no drawings in the specification to clarify where the support-side interface and air interface of the optically anisotropic layer are relative to the transparent support, and what the first direction, the second direction and the normal direction are relative to the transparent support and to the optically anisotropic layer. It is also unclear what the normal direction of the transparent support is relative to the first direction and the second direction at both the support-side interface and the air interface. Claim 6 recites the limitation "transparent layer" in the retardation film of claim 4 which depends on claim 1. There is insufficient antecedent basis for this limitation in the claim because claims 1 and 4 only recite a transparent support, not a transparent layer. Amendment is required.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

Art Unit: 1772

F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-2, 4, 7, 10-11 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2 of U.S. Patent No. 6,685,998 in view of Yamahara (US 6,839,110).

Examined claim 1 recites a retardation film comprising: a transparent support positioned in a plane; and at least one optically anisotropic layer having a first direction with a smallest refractive index, wherein said at least one optically anisotropic layer is formed of at least one compound exhibiting a liquid crystal phase; said at least one optically anisotropic layer exhibits biaxiality; and the first direction is substantially orthogonal to a direction normal to the plane of the transparent support. Conflicting claim 1 recites an optical compensatory sheet (also known as a retardation film) comprising: a transparent support and an optically anisotropic layer formed from liquid crystal molecules (at least one compound exhibiting a liquid crystal phase), wherein three principal refractive indices of the optically anisotropic layer are different from each other (exhibits biaxiality). Conflicting claim 1 fails to recite or suggest that the optically

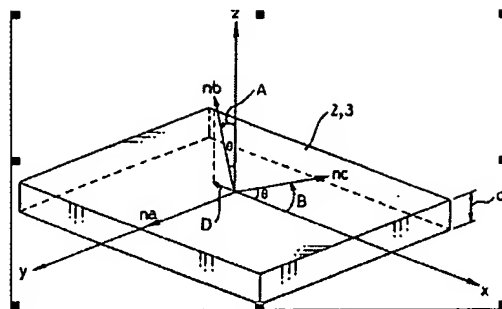
Art Unit: 1772

anisotropic layer has a first direction with a smallest refractive index, which is substantially orthogonal to a direction normal to the plane of the transparent support.

However, Yamahara teaches a retardation film (phase difference film, also known as a phase difference plate, column 9, lines 35-36) comprising a transparent support (column 8, lines 20-26) positioned in a plane (See Fig. 1, wherein 2 and 3 are the phase difference films or plates, column 8, lines 20-25). Yamahara teaches at least one optically anisotropic layer which exhibits biaxiality (column 8, line 58), having a first direction  $y$  with a smallest refractive index  $n_a$  ( $n_a < n_b < n_c$ , column 8, lines 55-60), wherein the first direction  $y$  is substantially orthogonal to a direction  $z$  normal to the plane  $xy$  of the transparent support (Fig. 3 of Yamahara shown on the next page), and wherein the optically anisotropic layer is formed of at least one compound exhibiting a liquid crystal phase (liquid crystal polymer with positive index anisotropy, column 8, lines 23-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the conflicting claims were issued, to have claimed a further embodiment in which the optically anisotropic layer has a first direction with a smallest refractive index, which is substantially orthogonal to a direction normal to the plane of the transparent support, as disclosed by Yamahara.

Regarding examined claim 2, conflicting claim 1 recites rod-like liquid crystal molecules oriented in cholesteric alignment, which is a biaxial liquid crystal phase, as evidenced by the specification of '998 (column 8, lines 1-5).



Regarding examined claim 4, conflicting claim 1 fails to recite or suggest that the optically anisotropic layer has a second direction with a largest refractive index, which is substantially orthogonal to a direction normal to the plane of the transparent support.

However, Yamahara teaches that the optically anisotropic layer has a second direction with a largest refractive index  $n_c$  ( $n_a < n_b < n_c$ , column 8, lines 55-60), wherein the second direction  $x$  is substantially orthogonal to a direction  $z$  normal to the plane  $xy$  of the transparent support (Fig. 3 of Yamahara shown above). Therefore, it would have been obvious to one of ordinary skill in the art at the time the conflicting claims were issued, to have claimed a further embodiment in which the optically anisotropic layer has a second direction with a largest refractive index, and is substantially orthogonal to a direction normal to the plane of the transparent support, as disclosed by Yamahara.

Regarding examined claim 7, conflicting claim 2 recites that the rod-like liquid crystal molecule (compound exhibiting the biaxial liquid crystal phase) has a polymerizable group (polymerizable compound) and is formed by a polymerization reaction (polymer compound).

Regarding examined claim 10, conflicting claim 1 fails to recite or suggest that the optically anisotropic layer is not stretched.

Art Unit: 1772

However, Yamahara teaches that the liquid crystal polymer is treated with an oblique orientation technique or hybrid orientation (column 8, lines 25-28), which means that the at least one optically anisotropic layer, formed from the at least one compound exhibiting a liquid crystal phase, is not stretched. Therefore, it would have been obvious to one of ordinary skill in the art at the time the conflicting claims were issued, to have claimed a further embodiment in which the optically anisotropic layer is not stretched.

Regarding examined claim 11, conflicting claim 1 fails to recite an elliptically polarizing film comprising the recited retardation film and a polarizing film.

However, Yamahara teaches that the retardation film, which is elliptically optically-anisotropic (phase difference plate 2 has a refractive index ellipsoid, column 8, 28-30), abuts a polarizing film (overlapping plate 4, column 8, lines 19-30, Figure 1), to constitute an elliptically polarizing film. Therefore, it would have been obvious to one of ordinary skill in the art at the time the conflicting claims were issued, to have claimed a further embodiment in which an elliptically polarizing film comprising the recited retardation film and a polarizing film.

4. Claims 1-2, 4, 6-11 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 10 of U.S. Patent No. 6,540,940 in view of Yamahara (US 6,839,110).

Conflicting claim 10 recites an optical compensatory sheet (retardation film) comprising: a transparent substrate (support), an orientation layer (alignment) layer and an optically anisotropic layer comprising discotic liquid crystal molecules (compound exhibiting a liquid crystal phase) meeting the recitation of examined claim 6. Conflicting

Art Unit: 1772

claim 10 recites that the orientation layer (alignment) containing an acrylic copolymer or methacrylic copolymer comprising the repeating unit of examined claim 9, which is the species of the polymer of examined claim 8. Conflicting claim 10 fails to recite or suggest the other limitations of examined claims 1-2, 4, 7, 10-11.

Regarding examined claim 1, conflicting claim 10 fails to recite or suggest that the optically anisotropic layer exhibits biaxiality, and has a first direction with a smallest refractive index, which is substantially orthogonal to a direction normal to the plane of the transparent support.

However, Yamahara teaches a retardation film (phase difference film, also known as a phase difference plate, column 9, lines 35-36) comprising a transparent support (column 8, lines 20-26) positioned in a plane (See Fig. 1, wherein 2 and 3 are the phase difference films or plates, column 8, lines 20-25). Yamahara teaches at least one optically anisotropic layer which exhibits biaxiality (column 8, line 58), having a first direction  $y$  with a smallest refractive index  $n_a$  ( $n_a < n_b < n_c$ , column 8, lines 55-60), wherein the first direction  $y$  is substantially orthogonal to a direction  $z$  normal to the plane  $xy$  of the transparent support (Fig. 3 of Yamahara shown on a prior page), and wherein the optically anisotropic layer is formed of at least one compound exhibiting a liquid crystal phase (liquid crystal polymer with positive index anisotropy, column 8, lines 23-26).

Therefore it would have been obvious to one of ordinary skill in the art at the time the conflicting claims were issued, to have claimed a further embodiment in which the optically anisotropic layer exhibits biaxiality, and has a first direction with a smallest



Art Unit: 1772

refractive index, which is substantially orthogonal to a direction normal to the plane of the transparent support, as disclosed by Yamahara.

Regarding examined claim 2, conflicting claim 10 fails to recite or suggest that the liquid crystal phase is a biaxial liquid crystal phase.

However, Yamahara teaches that the liquid crystal phase is a biaxial liquid crystal phase (positive refractive index anisotropy, column 8, lines 23-25). Therefore it would have been obvious to one of ordinary skill in the art at the time the conflicting claims were issued, to have claimed a further embodiment in which the liquid crystal phase is a biaxial liquid crystal phase, as disclosed by Yamahara.

Regarding examined claim 4, conflicting claim 10 fails to recite or suggest that the optically anisotropic layer has a second direction with a largest refractive index, and is substantially orthogonal to a direction normal to the plane of the transparent support.

However, Yamahara teaches that the optically anisotropic layer has a second direction with a largest refractive index  $n_c$  ( $n_a < n_b < n_c$ , column 8, lines 55-60), wherein the second direction  $x$  is substantially orthogonal to a direction  $z$  normal to the plane  $xy$  of the transparent support (Fig. 3 of Yamahara shown on a prior page). Therefore, it would have been obvious to one of ordinary skill in the art at the time the conflicting claims were issued, to have claimed a further embodiment in which the optically anisotropic layer has a second direction with a largest refractive index, and is substantially orthogonal to a direction normal to the plane of the transparent support, as disclosed by Yamahara.

Regarding examined claim 7, conflicting claim 10 fails to recite or suggest that the compound exhibiting liquid crystal phase is a polymer compound, or that it exhibits biaxial liquid crystal phase.

However, Yamahara teaches that the compound exhibiting the biaxial liquid crystal phase is a polymer compound (liquid crystal polymer with a positive refractive index anisotropy provided on the support, column 8, lines 21-26). Therefore, it would have been obvious to one of ordinary skill in the art at the time the conflicting claims were issued, to have claimed a further embodiment in which the compound exhibits a biaxial liquid crystal phase and is a polymer compound.

Regarding examined claim 10, conflicting claim 10 fails to recite or suggest that the optically anisotropic layer is not stretched.

However, Yamahara teaches that the liquid crystal polymer is treated with an oblique orientation technique or hybrid orientation (column 8, lines 25-28), which means that the at least one optically anisotropic layer, formed from the at least one compound exhibiting a liquid crystal phase, is not stretched. Therefore, it would have been obvious to one of ordinary skill in the art at the time the conflicting claims were issued, to have claimed a further embodiment in which the optically anisotropic layer is not stretched.

Regarding examined claim 11, conflicting claim 10 fails to recite an elliptically polarizing film comprising the recited retardation film and a polarizing film.

However, Yamahara teaches that the retardation film, which is elliptically optically-anisotropic (phase difference plate 2 has a refractive index ellipsoid, column 8, 28-30), abuts a polarizing film (overlapping plate 4, column 8, lines 19-30, Figure 1), to

Art Unit: 1772

constitute an elliptically polarizing film. Therefore, it would have been obvious to one of ordinary skill in the art at the time the conflicting claims were issued, to have claimed a further embodiment in which an elliptically polarizing film comprising the recited retardation film and a polarizing film.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 4, 7, 10-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamahara (US 6,839,110).

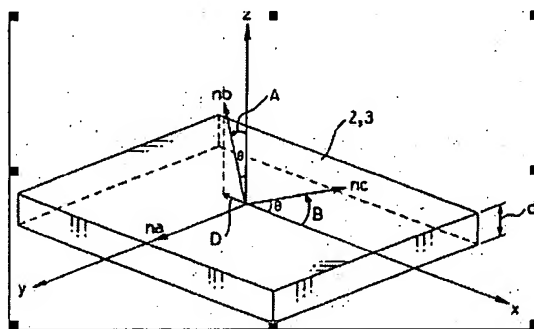
Regarding claim 1, Yamahara teaches a retardation film (phase difference film, also known as a phase difference plate, column 9, lines 35-36) comprising a transparent support (column 8, lines 20-26) positioned in a plane (See Fig. 1, wherein 2 and 3 are the phase difference films or plates, column 8, lines 20-25). Yamahara teaches at least one optically anisotropic layer which exhibits biaxiality (column 8, line 58), having a first direction y with a smallest refractive index  $n_a$  ( $n_a < n_b < n_c$ , column 8, lines 55-60), wherein the first direction y is substantially orthogonal to a direction z normal to the plane xy of the transparent support (Fig. 3 of Yamahara shown on the next page), and

Art Unit: 1772

wherein the optically anisotropic layer is formed of at least one compound exhibiting a liquid crystal phase (liquid crystal polymer with positive index anisotropy, column 8, lines 23-26).

Regarding claim 2, Yamahara teaches that the liquid crystal phase is a biaxial liquid crystal phase (positive refractive index anisotropy, column 8, lines 23-25).

Regarding claim 4, Yamahara teaches that the optically anisotropic layer has a second direction with a largest refractive index  $n_c$  ( $n_a < n_b < n_c$ , column 8, lines 55-60), wherein the second direction  $x$  is substantially orthogonal to a direction  $z$  normal to the plane  $xy$  of the transparent support (Fig. 3 of Yamahara shown below).



Regarding claim 7, Yamahara teaches that the compound exhibiting the biaxial liquid crystal phase is a polymer compound (liquid crystal polymer with a positive refractive index anisotropy provided on the support, column 8, lines 21-26).

Regarding claim 10, Yamahara teaches that the liquid crystal polymer is treated with an oblique orientation technique or hybrid orientation (column 8, lines 25-28), which means that the at least one optically anisotropic layer, formed from the at least one compound exhibiting a liquid crystal phase, is not stretched.

Regarding claim 11, Yamahara teaches that the retardation film, which is elliptically optically-anisotropic (phase difference plate 2 has a refractive index ellipsoid, column 8, 28-30), abuts a polarizing film (overlapping plate 4, column 8, lines 19-30, Figure 1), to constitute an elliptically polarizing film.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamahara, as applied to claims 1-2, 4, 7, 10-11 above.

Yamahara teaches a retardation film comprising: a transparent support positioned in a plane; and at least one optically anisotropic layer having a first direction with a smallest refractive index, wherein said at least one optically anisotropic layer is formed of at least one compound exhibiting a liquid crystal phase; said at least one optically anisotropic layer exhibits biaxiality; and the first direction is substantially orthogonal to a direction normal to the plane of the transparent support. Assuming that the transparent support is the transparent layer, Yamahara fails to teach that the retardation film further comprises an alignment film between the transparent layer and said at least one optically anisotropic layer.

Art Unit: 1772

However, Yamahara teaches that an alignment layer (11,14) is used to align the liquid crystal in the liquid crystal cell (16, column 8, lines 11-15), and that the liquid crystal in the anisotropic layer is treated with an orientation technique (column 8, lines 25-27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used an alignment layer between the transparent support and said at least one optically anisotropic layer of the retardation film of Yamahara, to align the liquid crystal in the anisotropic layer of the retardation film, as well as the liquid crystal in the liquid crystal cell of Yamahara, in order to obtain the desired orientation provided by the alignment layer.

4. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamahara as applied to claims 1-2, 4, 6-7, 10-11 above, and further in view of Negoro (US 6,540,940).

Yamahara has been discussed above, and fails to teach that the alignment layer comprises a polymer having at least one of a hydrophobic group and an excluded volume group, let alone that it comprises a repeating unit represented by Applicant's formula (I) and a repeating unit represented by Applicant's formula (II) or (III).

Negoro teaches a retardation film (an optical compensatory sheet) comprising: a transparent support (substrate), an alignment film (orientation) layer and an optically anisotropic layer compound exhibiting a liquid crystal phase (liquid crystal, column 91, lines 22-31), and that the alignment film comprises an acrylic copolymer or methacrylic copolymer comprising a repeating unit represented by formula (I) of Applicant and a

Art Unit: 1772

repeating unit represented by formula (II) or (III) of Applicant, which is a species of the polymer having at least one of a hydrophobic group and an excluded volume group, as defined by Applicant (original claim 8 is generic to original claim 9).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used the alignment film of Negoro as the alignment film of Yamahara, in order to take advantage of its properties, as taught by Negoro.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamahara, as applied to claims 1-2, 4, 6-7, 10-11 above, and further in view of Ono (US 6,712,896).

Yamahara teaches a retardation film comprising: a transparent support positioned in a plane; and at least one optically anisotropic layer having a first direction with a smallest refractive index, wherein said at least one optically anisotropic layer is formed of at least one compound exhibiting a liquid crystal phase; said at least one optically anisotropic layer exhibits biaxiality; and the first direction is substantially orthogonal to a direction normal to the plane of the transparent support. Yamahara fails teach that the biaxial liquid crystal phase is a biaxial nematic liquid crystal phase.

However, Ono teaches a retardation film (optical compensation film, column 26, line 50) which has an optically anisotropic layer on a support, wherein the optically anisotropic layer comprises a compound which more preferably exhibits a biaxial nematic liquid crystal phase (column 26, lines 55-58).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used a compound which exhibits a biaxial nematic

Art Unit: 1772

liquid crystal phase in the optically anisotropic layer of the retardation film of Yamahara, in order to provide the desired retardation properties, as taught by Ono.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamahara as applied to claims 1-2, 4, 6-7, 10-11 above, and further in view of Cannon KK (Derwent abstract of JP 50103485A).

Yamahara has been discussed above, and fails to teach that the alignment film comprises a polymer having at least one of a hydrophobic group and an excluded-volume group.

However, Cannon KK teaches an alignment film (coated with mol. orientation promoting agent, abstract) comprising a polymer having at least one of a hydrophobic group and an excluded-volume group (alkali metal salt of the poly(acrylic acid) partial ester, abstract) as defined by Applicant's specification (original claims 8-9), wherein the ester is the hydrophobic group, and the alkali metal salt group is the excluded-volume group. Cannon KK teaches that the polymer (mol. orientation promoting agent) aligns nematic liquid crystals vertically with no degradation of the liquid crystal properties and hence improves service lifetime for the device. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used the polymer of Cannon KK, having at least one of a hydrophobic group and an excluded-volume group, as defined by Applicant, in the alignment film in the retardation film which is obvious over Yamahara, in order to align liquid crystals with nematic phase vertically with no degradation of the liquid crystal properties and hence improves service lifetime for the retardation film of Yamahara, as taught by Cannon KK.



Art Unit: 1772

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Hon

Sow-Fun Hon

12/08/05

Alexander S. Thomas

ALEXANDER S. THOMAS  
PRIMARY EXAMINER